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CRUISE REPORT

VIBRACORING SAMPLING

NANTUCKET SOUND, MASSACHUSETTS

RESEARCH VESSEL - ANNANDALE

CRUISE ANN-2-77

September 27 - October 2, 1977

20 VIBRACORES

U.S. Geological Survey
Office of Marine Geology
Woods Hole, Massachusetts 02543

C. J. O'Hara

Introduction

A vibracore sampling program, under contract with Eastern Instrument Corporation, Norwood, New Jersey, was conducted in Nantucket Sound, Massachusetts by the U.S. Geological Survey during September 27th through October 2, 1977. The offshore investigation is part of a continuing marine geologic program, funded jointly by the Department of Public Works of the Commonwealth of Massachusetts and the U.S. Geological Survey. The offshore investigation is part of a continuing marine geologic program, funded jointly by the Department of Public Works of the Commonwealth of Massachusetts and the U.S. Geological Survey, Office of Marine Geology, Woods Hole. The coring program was carried out aboard the Research Vessel ANNANDALE under Captain Gary Van Tassel. Woods Hole and Nantucket Island, Mass. served as ports of operation.

Objectives

The vibracore sampling program is intended to determine the nature of the bottom sediments and shallow substrate of the inner shelf. The core data will be correlated with subbottom siesmic profiling data to determine the distribution, lithology and economic significance of offshore geologic features and mineral resources. In addition, these studies will document important landmark data, help to evaluate the feasibility and environmental impact of offshore mining of sand and gravel deposits and offshore disposal of solid waste material, and provide information on the geology and geologic history of the region.

Shipboard Systems

The following systems were in operation during the sampling program:

Vibracoring Rig *

Large Capacity Air Compressor \

(Shipboard Systems)

Epsco Loran-C Receiver

Epsco Loran-C Repeator

*Specifications on vibracoring rig:

Penetration capabiltiy - 30 feet (9 m)

Diameter of core sample - 3.5 inches (9 cm)

Minimum water depth for operation - 35 feet (11 m)

Maximum water depth for operation - 200 feet (61 m)

Personnel

The following personnel participated over the course of the sampling program:

Charles J. O'Hara	Scientist-in-charge
Wayne M. Ferrebee	Geologist - U.S.G.S., Woods Hole
Jack McLane	Geologist - U.S.G.S., Woods Hole
Diane Eskenasy	Geological Field Assistant, U.S.G.S., Woods Hole
John Aaron	Geologist - U.S.G.S., Woods Hole
Gary Clayton	Biologist - Massachusetts Coastal Zone Management
Jim Katsolis	Field Supervisor - Eastern Instrument Corporation

Statistics

Scheduled ship time - 6 days

Actual ship time - 6 days

Down-time equipment malfunction - 0.5 days

Down-time inclement weather - 1 day

Actual working days at sea - 4.5 days

(Statistics)

Stations cored - 20

Total core feet of sediment penetrated - 459 (140 m)

Total core feet of sediment recovered - 394 (120 m)

% recovery - 86%

Average core recovery per station - 19.7 feet (6 m)

Table 1 gives listing of stations vibracored

Figure 1 shows area of investigation and vibracore locations.

Table 1: Tabulation of sites cored and locations

Site	Station/Core	Lat.	Long.	Water depth (Feet)	Penetration/ Recovery (Feet)
NS-1A	4920/Vc-01	41°30.15'N	70°38.66'W	75	20/20
NS-3A	4921/VC-02	41°28.80'N	70°33.83"W	65	20/20
NS-11B	4922/VC-03	41°27.08'N	70°20.14'W	74	22/19
NS-15A	4923/VC-04	41°32.20'N	70°24.00'W	110	27/24
NS-19A	4924/VC-05	41°33.72'N	70°18.83'W	42	28/27
NS-4B	4925/VC-06	41°34.50'N	70°22.79'W	33	20/20
NS-21A	4926/VC-07	41°32.73'N	70°14.45'W	48	26/14
NS-16D	4927/VC-08	41°20.92'N	70°10.20'W	45	30/25
NS-19C	4928/VC-09	41°22.23'N	70°06.60'W	48	30/27
NS-20A	4929/VC-10	41°22.26'N	70°04.90'W	40	26/24
NS-21B	4930/VC-11	41°26.24'N	70°07.53'W	40	20/19
NS-25A	4931/VC-12	41°27.66'N	70°04.04'W	50	29/23
NS-19B	4932/VC-13	41°29.17'N	70°13.95'W	48	25/8
NS-6A	4933/VC-14	41°31.64'N	70°33.50'W	80	30/29
NS-10A	4934/VC-15	41°32.10'N	70°28.35'W	40	30/26
NS-16A	4935/VC-16	41°32.58'N	70°22.65'W	70	25/25
NS-8A	4936/VC-17	41°26.96'N	70°25.10'W	37	7/2
NS-15B	4937/VC-18	41°25.37'N	70°16.63'W	45	16/14
NS-18A	4938/VC-19	41°29.12'N	70°15.60'W	45	14/14
NS-17C	4939/VC-20	41°29.31'N	70°17.50'W	45	14/14

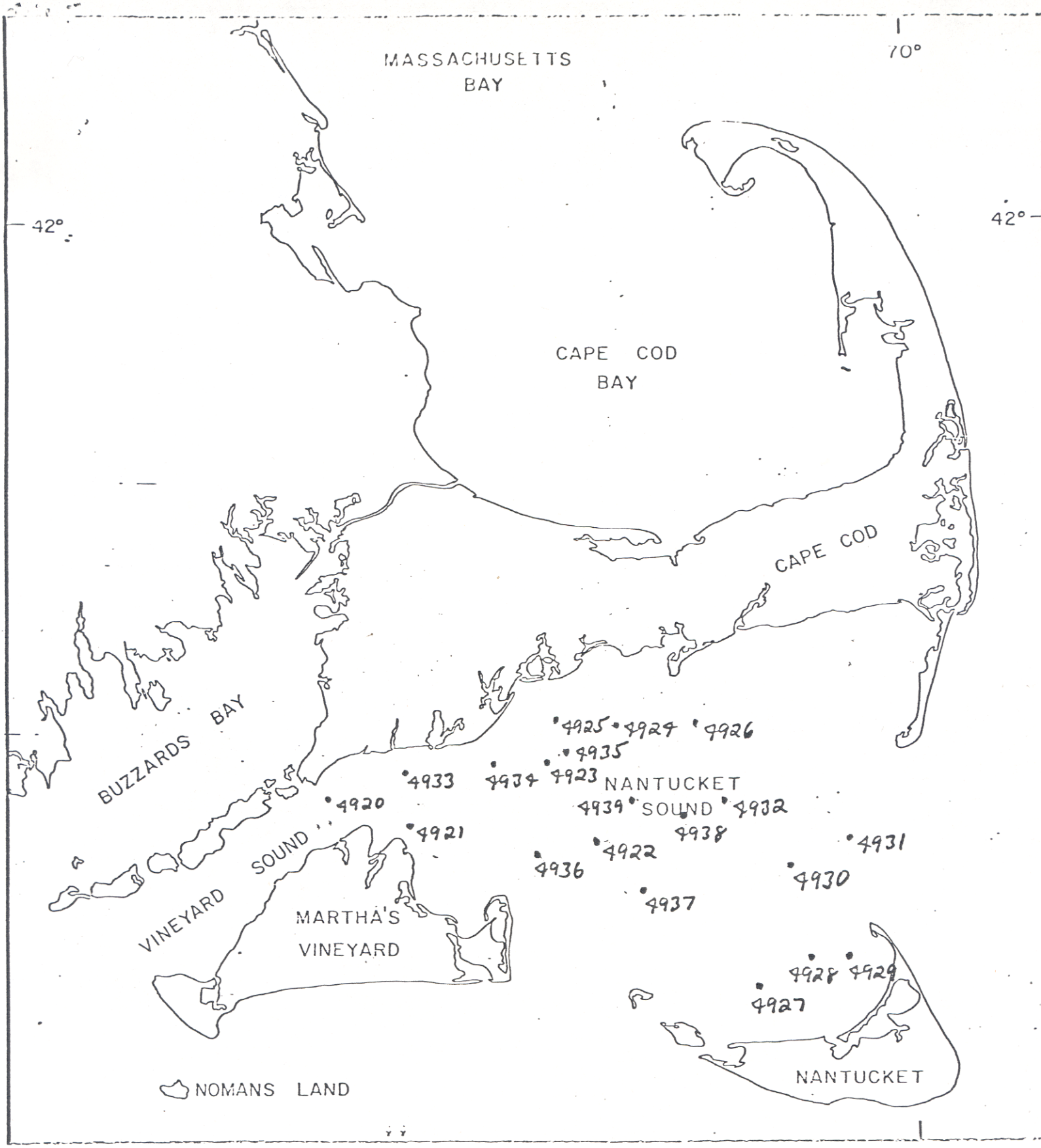

FIGURE 1

10 0 10 20 Miles

10 0 10 20 Kilometers